FML 1

2023-09-09

```
PALLAVIDATA<-read.csv("C:/Users/palla/OneDrive/Desktop/Assignments/FML/1st assignment/supermarke
t_sales - Sheet1.csv")
PALLAVIDATA
```

```
##     Invoice.ID Branch       City Customer.type Gender       Product.line
## 1   725-54-0677    C Naypyitaw       Member   Male       Health and beauty
## 2   146-09-5432    A   Yangon       Member   Male       Food and beverages
## 3   377-79-7592    C Naypyitaw       Member Female Electronic accessories
## 4   509-10-0516    B  Mandalay       Normal   Male       Home and lifestyle
## 5   595-94-9924    A   Yangon       Member Female       Health and beauty
## 6   865-41-9075    A   Yangon       Normal   Male       Food and beverages
## 7   545-07-8534    C Naypyitaw       Normal Female       Health and beauty
## 8   118-62-1812    C Naypyitaw       Member Female       Home and lifestyle
## 9   450-42-3339    C Naypyitaw       Normal   Male       Health and beauty
## 10  851-98-3555    B  Mandalay       Normal Female       Health and beauty
## 11  186-71-5196    A   Yangon       Member Female       Food and beverages
## 12  624-01-8356    B  Mandalay       Normal Female       Home and lifestyle
## 13  313-66-9943    B  Mandalay       Member Female       Food and beverages
## 14  151-27-8496    C Naypyitaw       Normal Female Electronic accessories
## 15  453-33-6436    A   Yangon       Normal Female       Home and lifestyle
## 16  522-57-8364    A   Yangon       Member   Male       Fashion accessories
## 17  459-45-2396    A   Yangon       Member Female       Food and beverages
## 18  717-96-4189    C Naypyitaw       Normal Female Electronic accessories
## 19  722-13-2115    C Naypyitaw       Member   Male         Sports and travel
## 20  749-81-8133    A   Yangon       Normal Female       Fashion accessories
## 21  777-67-2495    B  Mandalay       Normal   Male       Home and lifestyle
## 22  636-98-3364    B  Mandalay       Member Female Electronic accessories
## 23  246-55-6923    C Naypyitaw       Member Female       Home and lifestyle
## 24  181-82-6255    B  Mandalay       Normal Female       Home and lifestyle
## 25  838-02-1821    C Naypyitaw       Member Female       Home and lifestyle
## 26  887-42-0517    C Naypyitaw       Normal Female         Sports and travel
## 27  457-12-0244    C Naypyitaw       Member Female         Sports and travel
## 28  226-34-0034    B  Mandalay       Normal Female Electronic accessories
## 29  321-49-7382    B  Mandalay       Member   Male         Sports and travel
## 30  397-25-8725    A   Yangon       Member Female       Health and beauty
## 31  431-66-2305    B  Mandalay       Normal Female Electronic accessories
## 32  825-94-5922    B  Mandalay       Normal   Male         Sports and travel
## 33  641-62-7288    B  Mandalay       Normal   Male       Home and lifestyle
## 34  756-93-1854    C Naypyitaw       Member Female       Fashion accessories
## 35  243-55-8457    A   Yangon       Normal Female       Food and beverages
## 36  458-10-8612    C Naypyitaw       Normal   Male       Health and beauty
## 37  501-61-1753    B  Mandalay       Normal Female       Home and lifestyle
## 38  235-06-8510    C Naypyitaw       Member   Male       Home and lifestyle
## 39  433-08-7822    C Naypyitaw       Normal Female       Health and beauty
## 40  361-85-2571    A   Yangon       Normal Female         Sports and travel
## 41  131-70-8179    A   Yangon       Member Female       Health and beauty
## 42  500-02-2261    C Naypyitaw       Normal Female       Food and beverages
## 43  720-72-2436    A   Yangon       Normal   Male       Food and beverages
## 44  702-83-5291    C Naypyitaw       Member   Male       Fashion accessories
## 45  809-69-9497    A   Yangon       Normal Female       Home and lifestyle
## 46  449-16-6770    A   Yangon       Normal   Male       Health and beauty
## 47  333-23-2632    A   Yangon       Member   Male       Health and beauty
## 48  489-82-1237    A   Yangon       Normal Female Electronic accessories
## 49  859-97-6048    C Naypyitaw       Member   Male Electronic accessories
## 50  676-10-2200    B  Mandalay       Member   Male       Fashion accessories
## 51  373-88-1424    C Naypyitaw       Member   Male       Home and lifestyle
```

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## 52  365-16-4334   B  Mandalay      Normal Female     Food and beverages
## 53  503-21-4385   B  Mandalay      Member   Male      Health and beauty
## 54  305-89-2768   B  Mandalay      Member Female     Home and lifestyle
## 55  574-80-1489   B  Mandalay      Member Female      Food and beverages
## 56  784-08-0310   C Naypyitaw      Member Female      Food and beverages
## 57  200-40-6154   B  Mandalay      Member   Male     Home and lifestyle
## 58  846-10-0341   A    Yangon      Normal Female    Fashion accessories
## 59  577-34-7579   C Naypyitaw      Member   Male      Food and beverages
## 60  430-02-3888   B  Mandalay      Normal   Male  Electronic accessories
## 61  867-47-1948   C Naypyitaw      Normal Female     Home and lifestyle
## 62  384-59-6655   A    Yangon      Member Female      Food and beverages
## 63  256-58-3609   C Naypyitaw      Member   Male    Fashion accessories
## 64  324-92-3863   A    Yangon      Member   Male  Electronic accessories
## 65  593-08-5916   A    Yangon      Normal Female    Fashion accessories
## 66  364-34-2972   C Naypyitaw      Member   Male  Electronic accessories
## 67  794-42-3736   B  Mandalay      Normal   Male      Food and beverages
## 68  172-42-8274   B  Mandalay      Normal Female  Electronic accessories
## 69  558-60-5016   A    Yangon      Normal Female     Home and lifestyle
## 70  195-06-0432   A    Yangon      Member   Male     Home and lifestyle
## 71  605-03-2706   A    Yangon      Normal Female      Health and beauty
## 72  214-30-2776   B  Mandalay      Member Female  Electronic accessories
## 73  746-04-1077   B  Mandalay      Member Female      Food and beverages
## 74  448-34-8700   B  Mandalay      Member   Male     Home and lifestyle
## 75  452-04-8808   B  Mandalay      Normal   Male  Electronic accessories
## 76  531-56-4728   A    Yangon      Normal   Male     Home and lifestyle
## 77  744-82-9138   C Naypyitaw      Normal   Male    Fashion accessories
## 78  883-69-1285   B  Mandalay      Member   Male    Fashion accessories
## 79  221-25-5073   A    Yangon      Normal Female      Food and beverages
## 80  518-71-6847   B  Mandalay      Member   Male      Food and beverages
## 81  156-20-0370   B  Mandalay      Normal Female  Electronic accessories
## 82  151-33-7434   B  Mandalay      Normal Female      Food and beverages
## 83  728-47-9078   C Naypyitaw      Member   Male      Food and beverages
## 84  809-46-1866   A    Yangon      Normal   Male      Health and beauty
## 85  139-32-4183   A    Yangon      Member Female       Sports and travel
## 86  148-41-7930   C Naypyitaw      Normal   Male      Health and beauty
## 87  189-40-5216   C Naypyitaw      Normal   Male  Electronic accessories
## 88  374-38-5555   B  Mandalay      Normal Female     Fashion accessories
## 89  764-44-8999   B  Mandalay      Normal Female      Health and beauty
## 90  552-44-5977   B  Mandalay      Member   Male      Health and beauty
## 91  267-62-7380   C Naypyitaw      Member   Male  Electronic accessories
## 92  430-53-4718   B  Mandalay      Member   Male      Health and beauty
## 93  886-18-2897   A    Yangon      Normal Female      Food and beverages
## 94  602-16-6955   B  Mandalay      Normal Female       Sports and travel
## 95  745-74-0715   A    Yangon      Normal   Male  Electronic accessories
## 96  690-01-6631   B  Mandalay      Normal   Male    Fashion accessories
## 97  652-49-6720   C Naypyitaw      Member Female  Electronic accessories
## 98  233-67-5758   C Naypyitaw      Normal   Male      Health and beauty
## 99  303-96-2227   B  Mandalay      Normal Female     Home and lifestyle
## 100 727-02-1313   A    Yangon      Member   Male      Food and beverages
## 101 347-56-2442   A    Yangon      Normal   Male     Home and lifestyle
## 102 849-09-3807   A    Yangon      Member Female    Fashion accessories
##     Unit.price Quantity  Tax.5.    Total    Date Time     Payment    cogs
```

```
## 1     85.60      7 29.9600   629.1600  3/2/2019 13:50       Cash 599.20
## 2     35.04      9 15.7680   331.1280  2/9/2019 19:17    Ewallet 315.36
## 3     44.84      9 20.1780   423.7380 1/14/2019 14:00 Credit card 403.56
## 4     45.97      4  9.1940   193.0740  2/9/2019 12:02    Ewallet 183.88
## 5     27.73      5  6.9325   145.5825 3/26/2019 20:21 Credit card 138.65
## 6     11.53      7  4.0355    84.7455 1/28/2019 17:35       Cash  80.71
## 7     58.32      2  5.8320   122.4720 2/14/2019 12:42    Ewallet 116.64
## 8     78.38      4 15.6760   329.1960 3/24/2019 17:56       Cash 313.52
## 9     84.61     10 42.3050   888.4050  2/9/2019 18:58 Credit card 846.10
## 10    82.88      5 20.7200   435.1200 3/24/2019 14:08 Credit card 414.40
## 11    79.54      2  7.9540   167.0340 3/27/2019 16:30    Ewallet 159.08
## 12    49.01     10 24.5050   514.6050 1/27/2019 10:44 Credit card 490.10
## 13    29.15      3  4.3725    91.8225 3/27/2019 20:29 Credit card  87.45
## 14    56.13      4 11.2260   235.7460 1/19/2019 11:43    Ewallet 224.52
## 15    93.12      8 37.2480   782.2080  2/7/2019 10:09       Cash 744.96
## 16    51.34      8 20.5360   431.2560 1/31/2019 10:00    Ewallet 410.72
## 17    99.60      3 14.9400   313.7400 2/25/2019 18:45       Cash 298.80
## 18    35.49      6 10.6470   223.5870  2/2/2019 12:40       Cash 212.94
## 19    42.85      1  2.1425    44.9925 3/14/2019 15:36 Credit card  42.85
## 20    94.67      4 18.9340   397.6140 3/11/2019 12:04       Cash 378.68
## 21    68.97      3 10.3455   217.2555 2/22/2019 11:26    Ewallet 206.91
## 22    26.26      3  3.9390    82.7190  3/2/2019 12:36    Ewallet  78.78
## 23    35.79      9 16.1055   338.2155 3/10/2019 15:06 Credit card 322.11
## 24    16.37      6  4.9110   103.1310  2/8/2019 10:58       Cash  98.22
## 25    12.73      2  1.2730    26.7330 2/22/2019 12:10 Credit card  25.46
## 26    83.14      7 29.0990   611.0790 1/10/2019 10:31 Credit card 581.98
## 27    35.22      6 10.5660   221.8860 3/14/2019 13:49    Ewallet 211.32
## 28    13.78      4  2.7560    57.8760 1/10/2019 11:10    Ewallet  55.12
## 29    88.31      1  4.4155    92.7255 2/15/2019 17:38 Credit card  88.31
## 30    39.62      9 17.8290   374.4090 1/13/2019 17:54 Credit card 356.58
## 31    88.25      9 39.7125   833.9625 2/15/2019 20:51 Credit card 794.25
## 32    25.31      2  2.5310    53.1510  3/2/2019 19:26    Ewallet  50.62
## 33    99.92      6 29.9760   629.4960 3/24/2019 13:33    Ewallet 599.52
## 34    83.35      2  8.3350   175.0350  2/2/2019 14:05 Credit card 166.70
## 35    74.44     10 37.2200   781.6200 2/27/2019 11:40    Ewallet 744.40
## 36    64.08      7 22.4280   470.9880 1/20/2019 12:27    Ewallet 448.56
## 37    63.15      6 18.9450   397.8450  1/3/2019 20:24    Ewallet 378.90
## 38    85.72      3 12.8580   270.0180 1/24/2019 20:59    Ewallet 257.16
## 39    78.89      7 27.6115   579.8415  1/5/2019 19:48    Ewallet 552.23
## 40    89.48      5 22.3700   469.7700 3/30/2019 10:18       Cash 447.40
## 41    92.09      3 13.8135   290.0835 2/17/2019 16:27       Cash 276.27
## 42    57.29      6 17.1870   360.9270 3/21/2019 17:04    Ewallet 343.74
## 43    66.52      4 13.3040   279.3840  3/2/2019 18:14    Ewallet 266.08
## 44    99.82      9 44.9190   943.2990 3/27/2019 10:43       Cash 898.38
## 45    45.68     10 22.8400   479.6400 1/19/2019 19:30    Ewallet 456.80
## 46    50.79      5 12.6975   266.6475 2/19/2019 14:53 Credit card 253.95
## 47    10.08      7  3.5280    74.0880 3/28/2019 20:14       Cash  70.56
## 48    93.88      7 32.8580   690.0180  1/5/2019 11:51 Credit card 657.16
## 49    84.25      2  8.4250   176.9250 3/26/2019 14:13 Credit card 168.50
## 50    53.78      1  2.6890    56.4690  2/3/2019 20:13    Ewallet  53.78
## 51    35.81      5  8.9525   188.0025  2/6/2019 18:44    Ewallet 179.05
## 52    26.43      8 10.5720   222.0120 2/24/2019 14:26    Ewallet 211.44
```

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## 53     39.91      3  5.9865  125.7165 2/21/2019 12:40        Ewallet 119.73
## 54     21.90      3  3.2850   68.9850  1/9/2019 18:43        Ewallet  65.70
## 55     62.85      4 12.5700  263.9700 2/25/2019 13:22        Ewallet 251.40
## 56     21.04      4  4.2080   88.3680 1/13/2019 13:58           Cash  84.16
## 57     65.91      6 19.7730  415.2330  2/9/2019 11:45           Cash 395.46
## 58     42.57      7 14.8995  312.8895  1/6/2019 11:51           Cash 297.99
## 59     50.49      9 22.7205  477.1305 1/10/2019 17:16           Cash 454.41
## 60     46.02      6 13.8060  289.9260  2/7/2019 15:55           Cash 276.12
## 61     15.80     10  7.9000  165.9000  1/9/2019 12:07           Cash 158.00
## 62     98.66      9 44.3970  932.3370 2/19/2019 15:07           Cash 887.94
## 63     91.98      1  4.5990   96.5790 3/18/2019 15:29           Cash  91.98
## 64     20.89      2  2.0890   43.8690  2/5/2019 18:45           Cash  41.78
## 65     15.50      1  0.7750   16.2750 3/19/2019 15:23 Credit card  15.50
## 66     96.82      3 14.5230  304.9830 3/30/2019 20:37           Cash 290.46
## 67     33.33      2  3.3330   69.9930 1/26/2019 14:41 Credit card  66.66
## 68     38.27      2  3.8270   80.3670  3/2/2019 18:18 Credit card  76.54
## 69     33.30      9 14.9850  314.6850  3/4/2019 15:27        Ewallet 299.70
## 70     81.01      3 12.1515  255.1815 1/13/2019 12:55 Credit card 243.03
## 71     15.80      3  2.3700   49.7700 3/25/2019 18:02           Cash  47.40
## 72     34.49      5  8.6225  181.0725 3/11/2019 19:44 Credit card 172.45
## 73     84.63     10 42.3150  888.6150  1/1/2019 11:36 Credit card 846.30
## 74     36.91      7 12.9185  271.2885 2/10/2019 13:51        Ewallet 258.37
## 75     87.08      7 30.4780  640.0380 1/26/2019 15:17           Cash 609.56
## 76     80.08      3 12.0120  252.2520 2/11/2019 15:29           Cash 240.24
## 77     86.13      2  8.6130  180.8730  2/7/2019 17:59           Cash 172.26
## 78     49.92      2  4.9920  104.8320  3/6/2019 11:55 Credit card  99.84
## 79     74.66      4 14.9320  313.5720  3/4/2019 10:39           Cash 298.64
## 80     26.60      6  7.9800  167.5800 2/26/2019 15:10        Ewallet 159.60
## 81     25.45      1  1.2725   26.7225 3/10/2019 18:10 Credit card  25.45
## 82     67.77      1  3.3885   71.1585  2/4/2019 20:43 Credit card  67.77
## 83     59.59      4 11.9180  250.2780 1/19/2019 12:46           Cash 238.36
## 84     58.15      4 11.6300  244.2300 1/23/2019 17:44           Cash 232.60
## 85     97.48      9 43.8660  921.1860 3/14/2019 14:19        Ewallet 877.32
## 86     99.96      7 34.9860  734.7060 1/23/2019 10:33           Cash 699.72
## 87     96.37      7 33.7295  708.3195  1/9/2019 11:40           Cash 674.59
## 88     63.71      5 15.9275  334.4775  2/7/2019 19:30        Ewallet 318.55
## 89     14.76      2  1.4760   30.9960 2/18/2019 14:42        Ewallet  29.52
## 90     62.00      8 24.8000  520.8000  1/3/2019 19:08 Credit card 496.00
## 91     82.34     10 41.1700  864.5700 3/29/2019 19:12        Ewallet 823.40
## 92     75.37      8 30.1480  633.1080 1/28/2019 15:46 Credit card 602.96
## 93     56.56      5 14.1400  296.9400 3/22/2019 19:06 Credit card 282.80
## 94     76.60     10 38.3000  804.3000 1/24/2019 18:10        Ewallet 766.00
## 95     58.03      2  5.8030  121.8630 3/10/2019 20:46        Ewallet 116.06
## 96     17.49     10  8.7450  183.6450 2/22/2019 18:35        Ewallet 174.90
## 97     60.95      1  3.0475   63.9975 2/18/2019 11:40        Ewallet  60.95
## 98     40.35      1  2.0175   42.3675 1/29/2019 13:46        Ewallet  40.35
## 99     97.38     10 48.6900 1022.4900  3/2/2019 17:16        Ewallet 973.80
## 100    31.84      1  1.5920   33.4320  2/9/2019 13:22           Cash  31.84
## 101    65.82      1  3.2910   69.1110 2/22/2019 15:33           Cash  65.82
## 102    88.34      7 30.9190  649.2990 2/18/2019 13:28           Cash 618.38
##     gross.margin.percentage gross.income Rating
## 1                  4.761905      29.9600    5.3
```

```
## 2           4.761905      15.7680    4.6
## 3           4.761905      20.1780    7.5
## 4           4.761905       9.1940    5.1
## 5           4.761905       6.9325    4.2
## 6           4.761905       4.0355    8.1
## 7           4.761905       5.8320    6.0
## 8           4.761905      15.6760    7.9
## 9           4.761905      42.3050    8.8
## 10          4.761905      20.7200    6.6
## 11          4.761905       7.9540    6.2
## 12          4.761905      24.5050    4.2
## 13          4.761905       4.3725    7.3
## 14          4.761905      11.2260    8.6
## 15          4.761905      37.2480    6.8
## 16          4.761905      20.5360    7.6
## 17          4.761905      14.9400    5.8
## 18          4.761905      10.6470    4.1
## 19          4.761905       2.1425    9.3
## 20          4.761905      18.9340    6.8
## 21          4.761905      10.3455    8.7
## 22          4.761905       3.9390    6.3
## 23          4.761905      16.1055    5.1
## 24          4.761905       4.9110    7.0
## 25          4.761905       1.2730    5.2
## 26          4.761905      29.0990    6.6
## 27          4.761905      10.5660    6.5
## 28          4.761905       2.7560    9.0
## 29          4.761905       4.4155    5.2
## 30          4.761905      17.8290    6.8
## 31          4.761905      39.7125    7.6
## 32          4.761905       2.5310    7.2
## 33          4.761905      29.9760    7.1
## 34          4.761905       8.3350    9.5
## 35          4.761905      37.2200    5.1
## 36          4.761905      22.4280    7.6
## 37          4.761905      18.9450    9.8
## 38          4.761905      12.8580    5.1
## 39          4.761905      27.6115    7.5
## 40          4.761905      22.3700    7.4
## 41          4.761905      13.8135    4.2
## 42          4.761905      17.1870    5.9
## 43          4.761905      13.3040    6.9
## 44          4.761905      44.9190    6.6
## 45          4.761905      22.8400    5.7
## 46          4.761905      12.6975    5.3
## 47          4.761905       3.5280    4.2
## 48          4.761905      32.8580    7.3
## 49          4.761905       8.4250    5.3
## 50          4.761905       2.6890    4.7
## 51          4.761905       8.9525    7.9
## 52          4.761905      10.5720    8.9
## 53          4.761905       5.9865    9.3
```

```
## 54              4.761905         3.2850      4.7
## 55              4.761905        12.5700      8.7
## 56              4.761905         4.2080      7.6
## 57              4.761905        19.7730      5.7
## 58              4.761905        14.8995      6.8
## 59              4.761905        22.7205      5.4
## 60              4.761905        13.8060      7.1
## 61              4.761905         7.9000      7.8
## 62              4.761905        44.3970      8.4
## 63              4.761905         4.5990      9.8
## 64              4.761905         2.0890      9.8
## 65              4.761905         0.7750      7.4
## 66              4.761905        14.5230      6.7
## 67              4.761905         3.3330      6.4
## 68              4.761905         3.8270      5.8
## 69              4.761905        14.9850      7.2
## 70              4.761905        12.1515      9.3
## 71              4.761905         2.3700      9.5
## 72              4.761905         8.6225      9.0
## 73              4.761905        42.3150      9.0
## 74              4.761905        12.9185      6.7
## 75              4.761905        30.4780      5.5
## 76              4.761905        12.0120      5.4
## 77              4.761905         8.6130      8.2
## 78              4.761905         4.9920      7.0
## 79              4.761905        14.9320      8.5
## 80              4.761905         7.9800      4.9
## 81              4.761905         1.2725      5.1
## 82              4.761905         3.3885      6.5
## 83              4.761905        11.9180      9.8
## 84              4.761905        11.6300      8.4
## 85              4.761905        43.8660      7.4
## 86              4.761905        34.9860      6.1
## 87              4.761905        33.7295      6.0
## 88              4.761905        15.9275      8.5
## 89              4.761905         1.4760      4.3
## 90              4.761905        24.8000      6.2
## 91              4.761905        41.1700      4.3
## 92              4.761905        30.1480      8.4
## 93              4.761905        14.1400      4.5
## 94              4.761905        38.3000      6.0
## 95              4.761905         5.8030      8.8
## 96              4.761905         8.7450      6.6
## 97              4.761905         3.0475      5.9
## 98              4.761905         2.0175      6.2
## 99              4.761905        48.6900      4.4
## 100             4.761905         1.5920      7.7
## 101             4.761905         3.2910      4.1
## 102             4.761905        30.9190      6.6
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summary(PALLAVIDATA)
```

```
##    Invoice.ID          Branch              City           Customer.type
##   Length:102         Length:102         Length:102         Length:102
##   Class :character   Class :character   Class :character   Class :character
##   Mode  :character   Mode  :character   Mode  :character   Mode  :character
##
##
##
##     Gender           Product.line        Unit.price         Quantity
##   Length:102         Length:102         Min.   :10.08     Min.   : 1.000
##   Class :character   Class :character   1st Qu.:35.29     1st Qu.: 3.000
##   Mode  :character   Mode  :character   Median :58.23     Median : 5.000
##                                         Mean   :58.08     Mean   : 5.216
##                                         3rd Qu.:83.30     3rd Qu.: 7.000
##                                         Max.   :99.96     Max.   :10.000
##      Tax.5.              Total              Date               Time
##   Min.   : 0.775     Min.   :  16.27    Length:102         Length:102
##   1st Qu.: 4.931     1st Qu.: 103.56    Class :character   Class :character
##   Median :12.634     Median : 265.31    Mode  :character   Mode  :character
##   Mean   :15.687     Mean   : 329.42
##   3rd Qu.:22.413     3rd Qu.: 470.68
##   Max.   :48.690     Max.   :1022.49
##    Payment               cogs         gross.margin.percentage  gross.income
##   Length:102         Min.   : 15.50    Min.   :4.762           Min.   : 0.775
##   Class :character   1st Qu.: 98.62    1st Qu.:4.762           1st Qu.: 4.931
##   Mode  :character   Median :252.68    Median :4.762           Median :12.634
##                      Mean   :313.73    Mean   :4.762           Mean   :15.687
##                      3rd Qu.:448.27    3rd Qu.:4.762           3rd Qu.:22.413
##                      Max.   :973.80    Max.   :4.762           Max.   :48.690
##      Rating
##   Min.   :4.100
##   1st Qu.:5.425
##   Median :6.750
##   Mean   :6.798
##   3rd Qu.:7.900
##   Max.   :9.800
```

```
mean(PALLAVIDATA$Total)
```

```
## [1] 329.4192
```

```
median(PALLAVIDATA$Total)
```

```
## [1] 265.3088
```

```
min(PALLAVIDATA$Total)
```

```
## [1] 16.275
```

```
max(PALLAVIDATA$Total)
```

```
## [1] 1022.49
```

```
sd(PALLAVIDATA$Total)
```

```
## [1] 264.0819
```

```
var(PALLAVIDATA$Total)
```

```
## [1] 69739.27
```

```
sum(PALLAVIDATA$Total)
```

```
## [1] 33600.76
```

```
str(PALLAVIDATA$Total)
```

```
##  num [1:102] 629 331 424 193 146 ...
```

#part3**- descriptive statistics for categorical variables

```
table(PALLAVIDATA$Customer.type)
```

```
##
## Member Normal
##     48     54
```

```
table(PALLAVIDATA$Total)
```

```
##
##    16.275   26.7225    26.733    30.996    33.432   42.3675    43.869   44.9925
##         1         1         1         1         1         1         1         1
##     49.77    53.151    56.469    57.876   63.9975    68.985    69.111    69.993
##         1         1         1         1         1         1         1         1
##   71.1585    74.088    80.367    82.719   84.7455    88.368   91.8225   92.7255
##         1         1         1         1         1         1         1         1
##    96.579   103.131   104.832   121.863   122.472  125.7165  145.5825     165.9
##         1         1         1         1         1         1         1         1
##   167.034    167.58   175.035   176.925   180.873  181.0725   183.645  188.0025
##         1         1         1         1         1         1         1         1
##   193.074  217.2555   221.886   222.012   223.587   235.746    244.23   250.278
##         1         1         1         1         1         1         1         1
##   252.252  255.1815    263.97  266.6475   270.018  271.2885   279.384   289.926
##         1         1         1         1         1         1         1         1
##  290.0835    296.94   304.983  312.8895   313.572    313.74   314.685   329.196
##         1         1         1         1         1         1         1         1
##   331.128  334.4775  338.2155   360.927   374.409   397.614   397.845   415.233
##         1         1         1         1         1         1         1         1
##   423.738   431.256    435.12    469.77   470.988  477.1305    479.64   514.605
##         1         1         1         1         1         1         1         1
##     520.8  579.8415   611.079    629.16   629.496   633.108   640.038   649.299
##         1         1         1         1         1         1         1         1
##   690.018  708.3195   734.706    781.62   782.208     804.3  833.9625    864.57
##         1         1         1         1         1         1         1         1
##   888.405   888.615   921.186   932.337   943.299   1022.49
##         1         1         1         1         1         1
```

∏

```
str(PALLAVIDATA$City)
```

```
##  chr [1:102] "Naypyitaw" "Yangon" "Naypyitaw" "Mandalay" "Yangon" "Yangon" ...
```

#**part4-transforming the variables

```
log(PALLAVIDATA$Tax.5.)
```

```
##    [1]  3.3998632  2.7579826  3.0045929  2.2185511  1.9362205  1.3951302
##    [7]  1.7633600  2.7521309  3.7449053  3.0310994  2.0736749  3.1988772
##   [13]  1.4753349  2.4182325  3.6175983  3.0221794  2.7040422  2.3652782
##   [19]  0.7619734  2.9409592  2.3365516  1.3709269  2.7791608  1.5914776
##   [25]  0.2413763  3.3707038  2.3576413  1.0137804  1.4851211  2.8808263
##   [31]  3.6816660  0.9286145  3.4003971  2.1204635  3.6168463  3.1103102
##   [37]  2.9415400  2.5539662  3.3182324  3.1077208  2.6256464  2.8441533
##   [43]  2.5880647  3.8048609  3.1285134  2.5414051  1.2607311  3.4921952
##   [49]  2.1312035  0.9891694  2.1919328  2.3582090  1.7895069  1.1893667
##   [55]  2.5313130  1.4369875  2.9843174  2.7013277  3.1232676  2.6251033
##   [61]  2.0668628  3.7931719  1.5258389  0.7366855 -0.2548922  2.6757336
##   [67]  1.2038728  1.3420812  2.7070497  2.4974526  0.8628900  2.1543751
##   [73]  3.7451416  2.5586604  3.4170051  2.4859062  2.1532727  1.6078366
##   [79]  2.7035066  2.0769384  0.2409835  1.2203873  2.4780499  2.4535880
##   [85]  3.7811395  3.5549480  3.5183728  2.7680472  0.3893357  3.2108437
##   [91]  3.7177098  3.4061186  2.6490077  3.6454499  1.7583750  2.1684821
##   [97]  1.1143216  0.7018591  3.8854737  0.4649911  1.1911915  3.4313709
```

```
log(PALLAVIDATA$Unit.price)
```

```
##    [1] 4.449685 3.556490 3.803101 3.827989 3.322515 2.444952 4.065945 4.361569
##    [9] 4.438052 4.417394 4.376260 3.892024 3.372455 4.027670 4.533889 3.938470
##   [17] 4.601162 3.569251 3.757706 4.550397 4.233672 3.268047 3.577669 2.795450
##   [25] 2.543961 4.420526 3.561614 2.623218 4.480853 3.679334 4.480174 3.231200
##   [33] 4.604370 4.423049 4.309993 4.160132 4.145513 4.451086 4.368054 4.494015
##   [41] 4.522766 4.048126 4.197503 4.603369 3.821661 3.927699 2.310553 4.542017
##   [49] 4.433789 3.984902 3.578227 3.274500 3.686627 3.086487 4.140751 3.046425
##   [57] 4.188290 3.751150 3.921775 3.829076 2.760010 4.591680 4.521571 3.039271
##   [65] 2.740840 4.572854 3.506458 3.644666 3.505557 4.394573 2.760010 3.540669
##   [73] 4.438289 3.608483 4.466827 4.383026 4.455858 3.910422 4.312944 3.280911
##   [81] 3.236716 4.216120 4.087488 4.063026 4.579647 4.604770 4.568195 4.154342
##   [89] 2.691921 4.127134 4.410857 4.322409 4.035302 4.338597 4.060960 2.861629
##   [97] 4.110054 3.697591 4.578621 3.460723 4.186924 4.481193
```
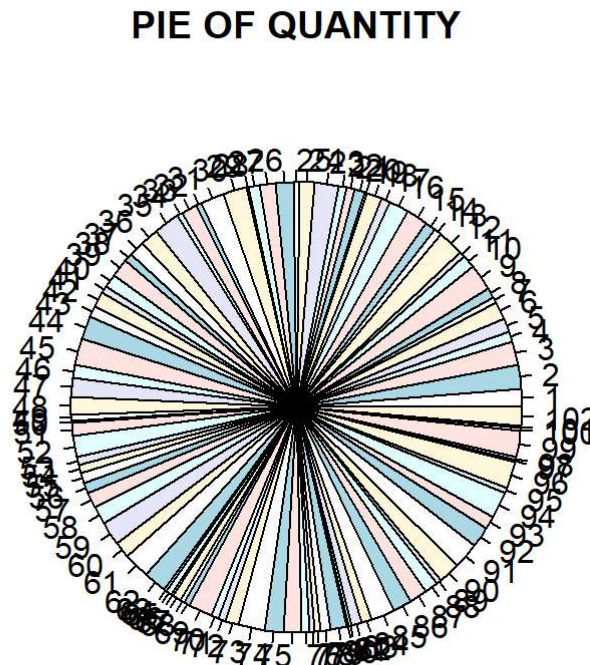
```
d<-PALLAVIDATA$Unit.price-mean(PALLAVIDATA$Unit.price)/sd(PALLAVIDATA$Unit.price)

d
```

```
##    [1] 83.464573 32.904573 42.704573 43.834573 25.594573  9.394573 56.184573
##    [8] 76.244573 82.474573 80.744573 77.404573 46.874573 27.014573 53.994573
##   [15] 90.984573 49.204573 97.464573 33.354573 40.714573 92.534573 66.834573
##   [22] 24.124573 33.654573 14.234573 10.594573 81.004573 33.084573 11.644573
##   [29] 86.174573 37.484573 86.114573 23.174573 97.784573 81.214573 72.304573
##   [36] 61.944573 61.014573 83.584573 76.754573 87.344573 89.954573 55.154573
##   [43] 64.384573 97.684573 43.544573 48.654573  7.944573 91.744573 82.114573
##   [50] 51.644573 33.674573 24.294573 37.774573 19.764573 60.714573 18.904573
##   [57] 63.774573 40.434573 48.354573 43.884573 13.664573 96.524573 89.844573
##   [64] 18.754573 13.364573 94.684573 31.194573 36.134573 31.164573 78.874573
##   [71] 13.664573 32.354573 82.494573 34.774573 84.944573 77.944573 83.994573
##   [78] 47.784573 72.524573 24.464573 23.314573 65.634573 57.454573 56.014573
##   [85] 95.344573 97.824573 94.234573 61.574573 12.624573 59.864573 80.204573
##   [92] 73.234573 54.424573 74.464573 55.894573 15.354573 58.814573 38.214573
##   [99] 95.244573 29.704573 63.684573 86.204573
```

#part5-plotting one variable

```
pie(PALLAVIDATA$Quantity,main="PIE OF QUANTITY")
```


#part6 - scatterplot

```
plot(PALLAVIDATA$Quantity,PALLAVIDATA$Unit.price,main="scatterplot")
```

scatterplot